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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,458	10/27/2003	Brian E. Joseph	07620001C1	2930
48642	7590	08/05/2009		
PHILIP D. LANE P.O. BOX 79318 CHARLOTTE, NC 28271-7063			EXAMINER MILLER, DANIEL H	
			ART UNIT	PAPER NUMBER
			1794	
			MAIL DATE	DELIVERY MODE
			08/05/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/693,458

**Applicant(s)**

JOSEPH, BRIAN E.

**Examiner**

DANIEL MILLER

**Art Unit**

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 6/9/2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 22-33 and 35-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-33 and 35-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date 6/9/2009.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/9/2009 has been entered.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 22-33, and 35-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hubbard et al (US 5,125,992) in view of Scott (US 5,154,373) and Bennett (US 6,797,251).

3. It is noted that Bennett is considered to be entitled to the provisional date of 12/13/2000, while the current claimed invention is considered to only be entitled to the

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continuation date of (8/31/2001), wherein the CIP discloses a metal matrix material and does not fully support the currently claimed invention. Therefore, Bennett is considered to be properly cited art.

4. Hubbard teaches a foam material coated with material intended to absorb electromagnetic radiation. The foam material can comprise polystyrene loaded with carbon (column 1 line 10-20), polyurethane foams (column 8), or Syntactic foams (column 12 line 40-45) which is considered to meet the claim limitation requiring "carbon foam." The sheets of foam material can be coated with a multiple layers of material comprising aluminum or Inconel (column 5 lines 5-10, 36-41). Further, overcoatings of dielectric material including epoxy resins (meeting the claim limitations of claim 26), or silicon oxide (glass forming compounds as claimed) can be added affording greater product stability and protection from exposure to degrading chemicals or environments (column 6 line 35-50).

5. Hubbard is silent as to the use of the glass forming oxidation inhibitors incorporated into the foam core.

6. Scott teaches a structural material having a foam core and a laminate outer layer similar to Hubbard (see figure 1 and abstract).

7. The foam of Scott can comprise a graphite (carbon) additives with a silicon carbide (considered a glass forming metal carbide as claimed) which is also coated with metal or Inconel facesheets (see column 4 lines 40-50 and claims 1 and 7-8).

8. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a silicon carbide coating instead of the silicon oxide coating taught

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by Hubbard and expect to form a heat resistant protective coating or to provide silicon oxide as an additive in the foam composite of Scott to impart protection from chemical degrading imparting like properties in the coatings as additives as are imparted as coatings or vice versa. No patentable distinction is seen.

9. The foam material of Scott has a density up to 10 lbs. per cubic foot (0.16 g/cc) overlapping applicant's claimed range (see column 3 lines 25-35). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a foam within applicant's claimed range given the teaching of overlapping range of Scott. No patentable distinction is seen.

10. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the foam of Scott as a substitute, or in addition to, the foam of Hubbard because both inventions want heat resistance, high strength, and chemical resistance and the (glass forming) ceramic foam has advantages over polystyrene and polyurethanes (taught by Hubbard) in that they are structurally stronger and more heat resistant and when provided with a mixture of loaded carbon material of Hubbard and/or the graphite additives of Scott the foam would be expected to form an ideal composite material. It is obvious to provide a mixture of materials known to be suitable for the same purpose. No patentable distinction is seen.

11. Further see Bennett for methods of forming a carbon foam from raw coal (column 3, as required by applicant's claim 22) and examples in Bennett for demonstrating it would be known in the art (based on the teachings of Bennett) to provide a raw coal

precursor and ceramic precursor and foam both materials together to form a composite material. No patentable distinction is seen.

12. Regarding claims 29-30 and 40-41, it would further be obvious to provide aluminum or Inconel as an additive to the carbon foam since they are taught by both references to be facing sheets in order to further enhance the ability of Hubbard to absorb electromagnetic radiation.

13. Regarding claims 27-28, the foamed ceramic of Scott would be considered an inert solid material as claimed and inherently contain ceramic particles as constituent material. No patentable distinction is seen.

14. Regarding claim 25, the carbon foam is calcined (or carbonized; column 3 line 30-35 Hubbard).

15. Regarding claim 24, it would have been obvious to one of ordinary skill to provide a foam having a compressive strength up to about 6000 psi in order to provide a structurally stronger foam that provides greater support and insulating properties. No patentable distinction is seen.

### ***Response to Arguments***

16. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

17. The 102 and 103 rejections over Hojaji has been withdrawn due to attorney argument that the fly ash based foam of Hojaji while containing a glass forming

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compound can not reasonably be interpreted to be a carbon foam. A new rejection has been asserted above.

18. It is noted that Bennett is considered to be entitled to the provisional date of 12/13/2000, while the current claimed invention is considered to only be entitled to the continuation date of (8/31/2001), wherein the CIP discloses a metal matrix material and does not fully support the currently claimed invention. Therefore, Bennett is considered to be properly cited art.

19. See new rejection above.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL MILLER whose telephone number is (571)272-1534. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571)272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel Miller

/JENNIFER MCNEIL/  
Supervisory Patent Examiner, Art Unit 1794